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A SHORT TRACT
ON THE
FORMATION OF TUMOURS,
AND
THE PECULIARITIES
THAT ARE MET WITH IN THE STRUCTURE OF THOSE THAT
HAVE BECOME CANCEROUS;
WITH
THEIR MODE OF TREATMENT.

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PREFACE.

As this short tract is the last of my professional labours that will be submitted to the public, I cannot, at the age of seventy-four, make a better preface to it, than by an humble prayer of grateful acknowledgment to the Allwise Creator, who has permitted me to continue the investigation of his most wonderful works for so long a period, and thus enabled me, in many instances, to alleviate the miseries of suffering humanity, and to glorify the name of the Author of our existence.

ROYAL HOSPITAL, *Chelsea*,
May 6, 1830.



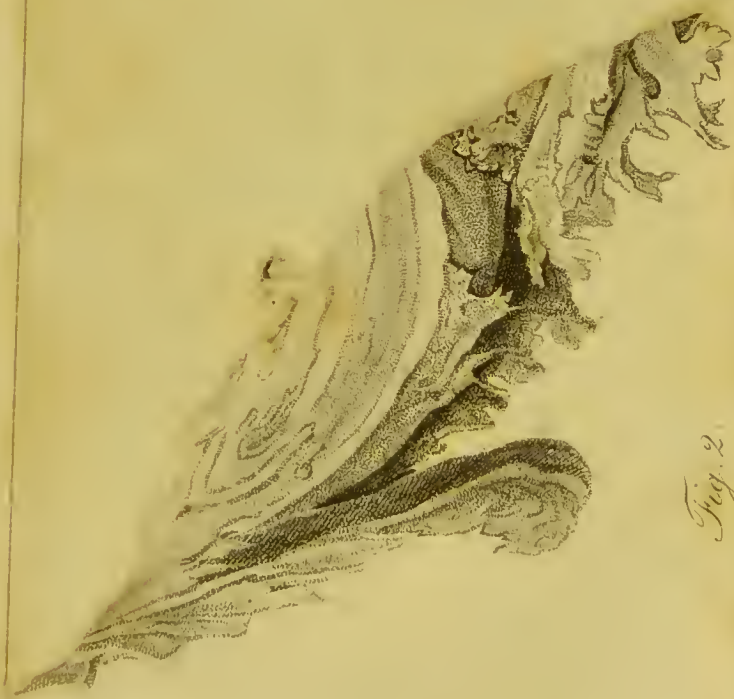
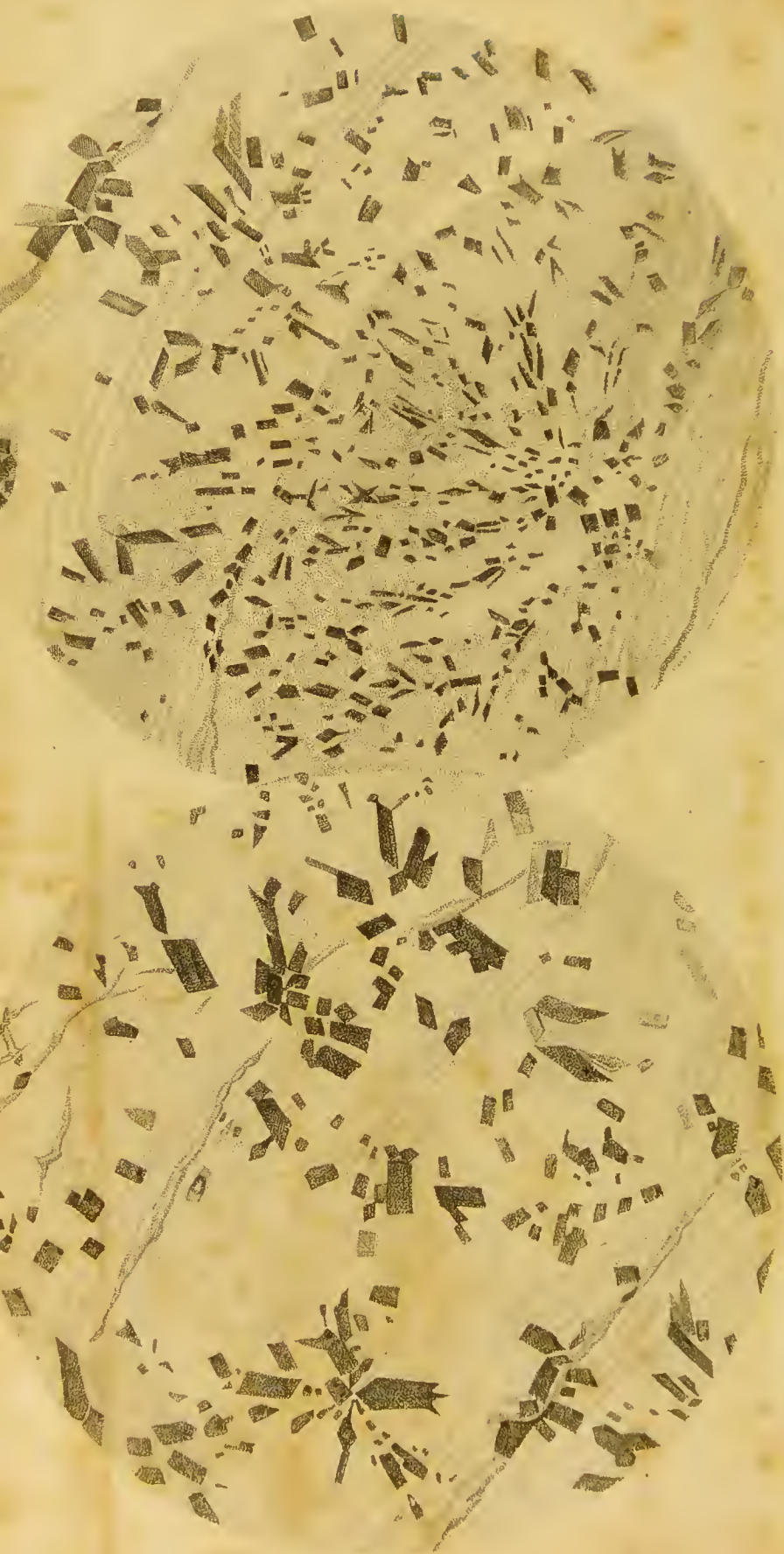


Fig. 2.



St. Peter

St. Peter del

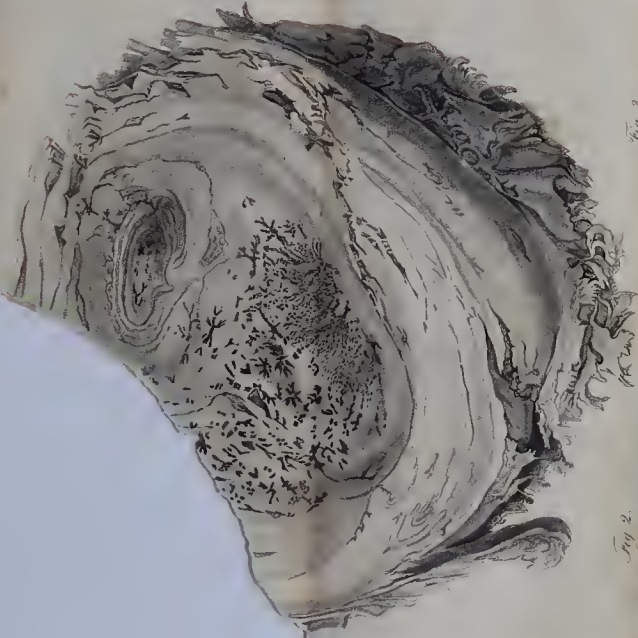


Fig. 2.

Fig. 3.



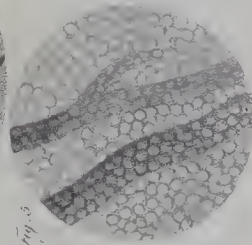
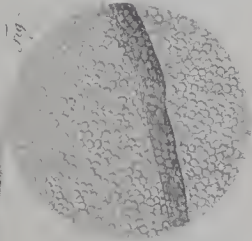
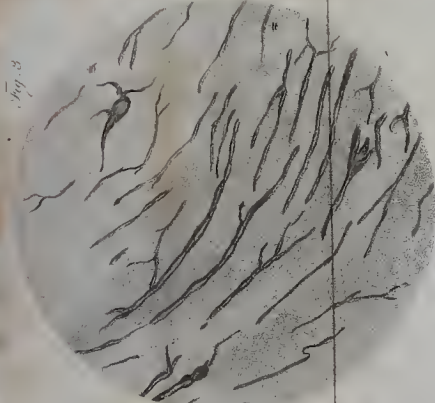
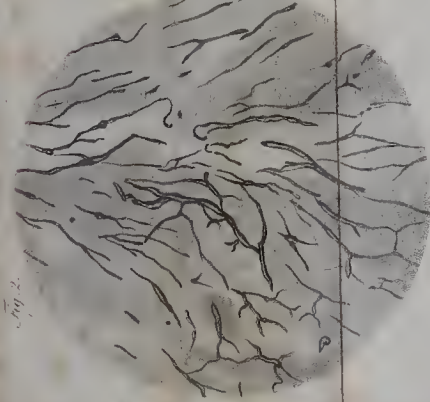
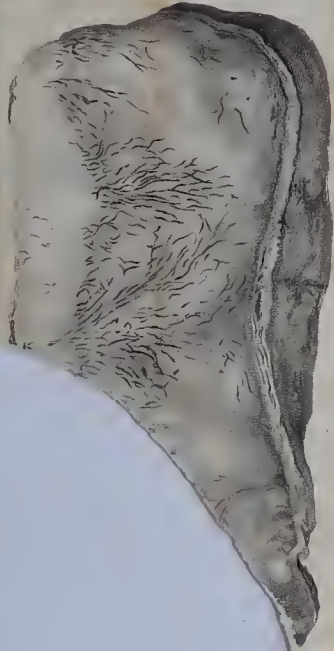


Fig. 6

Fig. 7

ON THE
FORMATION OF TUMOURS,

&c.

IN the year 1800 I published, in the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, an account of tumours found incased in the thecæ of nerves; and in 1805, a tract on cancer; containing materials, with a view to illustrate the history of that disease, with which we were little acquainted.

In youth we can only publish our professional acquirements: in age we can lay before the public the result of our professional experience; and unless the first have appeared, the second cannot be justly appreciated.

In the present volume I shall reprint these cases, and make known the facts I have since acquired respecting tumours in general, and of cancerous ones in particular.

Before we can attempt the investigation of structures the produce of disease, it is necessary that we should know the ingredients of which our bodies are originally composed, and the means by which, when parts are injured, they are repaired.

As the blood is the fluid in which these materials are circulated, and the arteries are the vessels which, under the agency of the nerves, deposit the supplies required, while the lymphatics carry off the parts rendered useless, we must first acquire a knowledge of these vessels, and of their actions when the body is in health ; since it is only when such actions are perverted, or otherwise interfered with, that the produce of disease is met with.

These subjects I have treated of in an-

other work; and here we have only to consider those cases where either the blood or some part of its ingredients, in consequence of external violence, are deposited in greater proportions than is required to repair the injury, as it is from this accumulation that tumours are produced; and in general they resemble in structure, more or less, the substance of the natural parts by which they are immediately surrounded. Fatty tumours are nothing more than a deposit of fat in parts that have been slightly injured, and have never recovered their healthy actions, but go on depositing that substance where it was not required.

Where the injury has been more severe, the materials of which the consequent tumours are composed differ according to the quantities and new combinations of the extravasated materials; but although unlike one another, still, however, in general, in their texture, they bear a resemblance to

the healthy parts by which they are surrounded.

It is not only necessary for the surgeon to know the nature of the structure of the tumour, but in many cases it is important to examine with accuracy the parts surrounding it, and the mode in which it is connected with them.

There is a particular species of tumour, met with in the neck, and probably in other situations, which is contained in a cyst, and only loosely connected with it by small blood-vessels from its surface and cellular membrane. It is of a yellowish-white colour, and somewhat resembles a kidney. It is of a uniform texture; and when allowed to increase to a considerable size, some portions become more compact than others.

This tumour is very common; and in its removal it is only necessary to lay open the cyst, and disengage the tumour with the finger. This I have frequently done: but

there is a tumour apparently similar, incased in a nerve, which requires a different mode of extirpation. I shall mention the cases of this kind which have come under my observation, and describe the mode of operation which should be employed for their removal.

A lady, twenty years of age, had a tumour on the outer side of the biceps muscle of the right arm, the size and shape of a pullet's egg: it was movable in the surrounding parts; it had been several years in acquiring its present size, and was very painful when pressed upon. Its rapid increase induced her to have it removed by the knife. When the parts were fully exposed, the surface was smooth and shining. At both ends the tumour terminated in a white cord. Upon cutting through the outer covering, the real tumour was found to be enclosed in a nerve. When this discovery was made, it was thought

prudent to divide the nerve at both ends, and remove the whole. The artery bled so freely as to require being secured by ligature. The skin did not unite by the first intention, but the parts healed very kindly. The patient had no use afterwards of her thumb and fore-finger, and had a numbness in these parts; the skin which covered them was unusually rough and dry, and the cuticle came off in scales. On examining the tumour, three inches of the nerve itself had been removed: it was separated into two portions, each much flattened, and passing over the sides of the tumour. There was also a thin nervous expansion, not thicker than a membrane, completely investing the whole. This was readily separated, although more firmly attached at the extremities.

The tumour, when its substance was examined, had the appearance of being made up of serpentine fibres running in the course of the nerve: these were separ-

ate from each other, and the interstices filled up by the substance of the tumour ; but near its surface the tumour had a radiated structure.

The following case is of the same kind: — Peter Coillot, a Frenchman, thirty-five years of age, was under my care at St. George's hospital, in 1796, with a tumour between the two folds of the arm-pit, which became very prominent when the arm was extended : it admitted of sufficient lateral motion to decide that it had no connection with the parts behind. In July, 1795, he felt, for the first time, pain in the fingers of that hand, but no tumour was discovered till June, 1796, and then was as large as an egg. When I first saw it, it was double that size. It was very painful, and still more so when pressed. His sufferings became insupportable ; and he requested that it might be removed. Upon dividing the integuments, the axillary vein was exposed

on the surface of the tumour. When the tumour was laid bare it had a smooth surface, and terminated at its lower part in a white cord. When this was pulled, it gave great uneasiness in the arm, but not in the tumour, showing the similarity between this and the preceding case. When this covering was divided and in part separated, the tumour was expelled by the action of the neighbouring parts. The patient felt no pain, there was no bleeding, and the parts were superficially dressed. The tumour was $3\frac{1}{2}$ inches long, and two thick, and consisted of a whitish firm substance. In the centre was a very obscure fibrous texture ; near the surface it was indistinctly radiated. The patient next day had no pain, and could move his fingers. On the fourth day he lost his appetite, his pulse became frequent, and the skin hot, his spirits depressed, and on the following day he died.

The tumour was found, on examining the body, to have been incased in one of the large nerves of the axillary plexus: the principal substance of the nerve was behind the tumour. The cyst was much contracted, and four times thicker than at the time of the operation. The cavity was almost filled with coagulated blood, and lined with coagulable lymph. The surrounding parts were condensed into one mass, and the parts were with difficulty separated by dissection.

No other part of the body had been affected, except that a similar tumour had formed in one of the smaller nerves, lying between the axillary artery and the original tumour, which prevented the pulsation of the artery being distinguished in the time of the operation. The structure of this smaller tumour resembled that in the lady's arm.

These tumours have this peculiar symptom,—that when moved laterally no pain is

excited ; but to a great degree when motion is attempted in the other direction.

In comparing these cases, we find that the constitution is much less affected by the removal of three inches of a nerve than by the inflammation produced over its substance to the same extent.

That tumours formed within the skull have produced absorption of the bones, and made their way externally, producing no pressure upon the brain itself, is proved by several cases ; and that tumours formed upon the external table of the skull are, in their increase, confined to that situation, and have not affected the diploe, or the inner table, is also proved by cases upon record ; but that a tumour can be formed in the diploe of the skull, between the two tables, in consequence of external injury, and in its increase make its way through the external table without injuring the internal one, is certainly not generally known.

Having met with a very extraordinary instance of this kind, I shall give it as an illustration of such tumours, and have the more satisfaction in doing so, the tumour having been successfully removed by an operation, and there not having been the smallest disposition to return, after a period of thirteen years; nor have bad consequences of any kind resulted from the operation.

As the operation appeared to all the surgeons who had seen the patient as one attended with too much risk of life to be attempted, it is right, in my own justification, to mention that I was encouraged to the attempt by the good health of the individual, and from having seen in the Hunterian collection a bony tumour, that had its origin in the diploe of the human skull, and, in its increase, destroyed the external table, but had not injured the internal one.

Hannah Jones came into St. George's hospital in the year 1816, with a tumour, the basis of which was bone; but the most prominent part was of a softer substance. It had its origin underneath the external table of the right parietal bone; and the tumour in its progress forward approached so near the outer edge of the orbit, that there was only space to admit the blade of a saw between them. The annexed representations, one of them taken before the operation, the other ten years after it, make all description of the appearance of the woman's head unnecessary. The tumour had its origin from the kick of a horse, by the turn-up of the heel of the shoe, when the patient was between two and three years old. It had gone on gradually increasing from that time, and had been considered, from its situation, beyond the reach of a surgical operation. She was twenty-five years of age, and, from this deformity, unable to get her bread, and not

fit to appear in public. She had been sent from the country; and although she was taken into the hospital as my patient, she was only detained till I should see her, no one believing that an operation was advisable. After examining the case with great circumspection, I said that I would sleep upon it, and next day give my opinion. On the following day I repeated my examination; and having done so, I told the woman that my opinion decidedly was that the tumour could be safely removed, and that I was ready to take my share of the responsibility in the performance of the operation; but the submitting to it must be her own act and deed. If the distress produced by its bulk, and the misery it occasioned, was so great as more than counterbalanced the pain and danger attendant upon its removal, and she would ask to have the operation performed, I was ready to comply with her wishes. After maturely weighing all the circumstances, she

cheerfully submitted to the operation, which I performed on the 9th of October, 1816, in the theatre of St. George's hospital. The operation was begun by a crucial incision through the integuments down to the surface of the tumour ; the four flaps of skin were turned back ; and all the soft parts of the tumour, which consisted of fat mixed with a steatomatous substance, were removed ; and as doing this had occupied a considerable time, the skin was brought over the remaining tumour, and the patient put to bed. The pain had not been severe, and was submitted to with great fortitude. On the next day the skin was turned back ; the bony rim surrounding the base of the remaining tumour, formed by the external table, was exposed all round ; and, as it was close to the orbit, a saw was so contrived that its blade could be passed between them, having an iron bow fixed upon the opposite side of the blade instead of behind ; so that there was no impediment

to the working of the saw till the extensive base of the tumour, that consisted wholly of bone, was sawed through. The integuments were then brought forwards; and, although they were at first so much too large as to be thrown into folds, they very soon contracted, and in a few days did not extend beyond the surface on which they were laid; and the parts healed in the same manner as any other wound, leaving a firm cicatrix, with a more regular surface than there was reason to expect. In the course of the healing of the parts, no symptoms, either local or constitutional, were produced.

The case was so extraordinary that I was desirous of the patient remaining under my own observation, that I might watch over the result of the operation, and took her into my service, as a servant, in the house at Chelsea hospital, allotted me as surgeon to that institution; and, after remaining there for some years, I got her

appointed a nurse in St. George's hospital, where she now resides in perfect health fifteen years after the operation.

This case establishes the fact that all tumours on the head may be removed without danger, provided no symptoms have occurred, during their increase, of any of the functions of the brain having been interfered with; and I have since seen a watery tumour in the diploe, under the external table of the frontal bone of a woman, which many surgeons were afraid to remove: this induced the patient to come into St. George's hospital, and she was cured under the care of my colleague, Mr. Robert Keate. Upon destroying the external table of the skull, by which means the fluid escaped, and keeping the diploe exposed, the cavity filled up, and the woman got quite well.

Cases of this kind completely expose the fallacies of the doctrine of craniology, than which nothing can be more absurd;

since the external surface of the internal table of the skull, and that of the external table, can never be under like circumstances, nor have similar changes in them produced from the same causes or corresponding circumstances; and yet the sole foundation of this doctrine is a supposition that the effect of the development of the brain upon the internal table is produced in an equal degree at the same time in the external table, which, from the nature and texture of the diploe, can never happen.

Cancer has hitherto been considered as a disease originating in a poison generated in different parts of the body, from accidental or other causes, and more especially in those of a glandular structure.

As the same parts in different individuals, under similar circumstances of violence, do not always form cancerous tumours, when they do so, it must arise from a peculiarity of constitution disposing the

injured parts to take on this disease; and therefore the tumour, in its origin, cannot be cancerous.

The supposition that any disease can be hereditary, is, I believe, void of foundation; although the constitutions of children may so nearly resemble those of their parents, as to render them liable, when similarly circumstanced, to the same diseases.

Scrofula is, by many medical men, considered as hereditary in families; but now that it is ascertained that, in hard winters in this country, the young of the monkey and lion tribe die of that disease, it must be admitted to be the effect of climate upon their constitutions. When we consider that an accident of the most simple kind, from which the parts shall recover in a healthy constitution, and in another person be followed by the formation of a tumour, and this tumour become afterwards a cancer, we must be forced to admit that the cancerous disposition was not formed

by the injury the parts had received, but from some defect in the constitution of the individual, which prevented the parts from being healed in the usual manner, and left them in a state disposed to take on this disease.

When the muscular and tendinous fibres of the gastrocnemius muscle are lacerated, the ruptured vessels bleed and form a tumour; this blood is commonly absorbed, and the parts are restored to their healthy state. The same thing occurs when the pectoral muscle is injured; but there are constitutions in which the parts do not recover, and a cancerous tumour is formed.

The late Mr. Hunter, in consequence of throwing a stone with an over-exertion, strained his pectoral muscle; the lacerated fibres produced hæmorrhage, and a consequent swelling: he became faint, and was obliged to keep the parts in a state of rest; but in a few days he recovered from the

immediate effects of the accident, the swelling subsided, and he being in perfect health, the parts were united in the usual manner, and the muscle in a short time recovered itself. A gentleman who had a similar accident, followed by a tumour in the part, which he did not believe of any consequence, insured his life, and declared himself labouring under no disease. He afterwards died from a cancer formed in that tumour. Mr. Cline was consulted, and said that the tumour in the pectoral muscle was a cancer, and had been so from its first formation. In this opinion he was supported by another surgeon; and therefore the office refused paying the insurance, as the gentleman died in consequence of the fungous excrescence which this tumour afterwards produced. The case came before Sir William Grant, then Master of the Rolls, who was staggered by Mr. Cline's affidavit, but not convinced, and called upon me to know my opinion. I stated, that if

Mr. Cline was correct, all such accidents would be immediately followed by cancer, which I knew was not the case, and gave him several instances in confirmation of my assertion, in particular, that of Mr. Hunter; and the gentleman's executors gained their cause: since Mr. Cline could bring no proof when the cancerous disposition first took place; and as the gentleman, at the time he took the oath, could have no knowledge that the swelling brought on by the accident could be the forerunner of any disease.

If we trace the consequences produced by accidental extravasation of blood, we find that when it is effused into the belly of a healthy person it is absorbed, and the wounded vessel recovers itself by the contraction of its coats, and the orifice is completely obliterated.

Where the muscular parts of the body are bruised, and blood is extravasated into the cellular membrane, the parts recover

by the same processes taking place ; but when the patient, or the parts, are not in perfect health, the blood effused does not coagulate, and is not absorbed : it is decomposed, and remains in the state of a dark-coloured fluid in the cavity that had been produced by its extravasation. Under such circumstances, if nothing is done by art, it will be brought to the surface, like any other abscess ; and when let out the parts will immediately recover themselves.

Where the blood is placed at rest in the dilatation of an aneurismal tumour, it coagulates ; afterwards, the red globules part with their colouring matter, which escapes into the circulating blood ; the blood globules fall to the most depending part of the cavity ; the lymph globules rest upon their surface ; and the serum deposits the lymph globules that make a part of its composition ; the salts crystallise, and are met with between the layers of the coagulum. Also, the carbonic acid gas escapes

into the circulating blood while these changes are going on.

When the aneurismal tumour is no longer supplied with fluid blood, the increase of its size is arrested, and its component parts are gradually absorbed, without laying the foundation of disease.

If a part made up of glandular structures is bruised, the vessels composing the glands are ruptured, and throw out their contents : these consist partly of the fluid secreted, and of those ingredients of the blood that are undergoing the necessary changes to form the peculiar secretion. In this case a tumour is formed, differing exceedingly from that of an aneurism in its contents: in one part there are lymph globules only, forming solid masses ; in others there are similar masses of blood globules, with tubes of carbonic acid gas passing through them, which become vessels filled with red blood. This appearance will be better understood by the annexed drawing.

This which I have described is the structure of what has been hitherto denominated a scirrhus, and has been always considered as the previous stage to a true or stony cancer.

If we analyse this structure, and trace the future changes the parts undergo in the progress of a cancerous disease, I am induced to consider the serum and lymph globules to be the parts that become vitiated, and rendered capable of propagating the morbid poison.

This opinion receives strong confirmation by red blood not being met with in such tumours, in the latter and confirmed stages of the disease, and the tumour itself, in its increase, becoming harder in its texture; to which we may add, that the only discharge that takes place, when such tumours produce any, is an aqueous fluid, or, in other words, serum devoid of its coagulable lymph, which in a natural state it contains in considerable quantity. This

discharge, in some cases, is in very great quantity; and when that happens, the increase of the tumour, and the progress of the disease, very often appear to be arrested. In healthy parts, when a breach is made and the parts are not united by the first intention, suppuration is produced over the surface of the sore, and pus is formed. This pus is converted into new flesh, and has been till now considered as no part of the circulating blood, but a new substance formed: it is, however, nothing more than the blood globules and the carbonic acid gas, with the serum of the blood and the coagulable lymph contained in it, which, when exposed to the atmosphere, coagulates, becomes vascular, and then takes the name of granulations. Where vessels carrying red blood are not injured, only those carrying lymph globules and serum, new flesh cannot be produced, the materials for its formation not being present. When this happens upon membranes, the lymph

coagulates upon the surface that throws it out, and the carbonic acid gas contained in it becomes vascular; and then it possesses all the properties of the membranes of the living body, the superfluous serum having escaped into the cavity which the membrane lines. We have illustrations of this in inflamed veins, and in inflammation of the dura mater of the brain: but this newly formed substance does not become the seat or the origin of disease, neither the serum nor the lymph of which it is composed having acquired any morbid quality.

When the internal structure of any of the more solid parts of the human body is lacerated, or otherwise injured, the ruptured vessels in it throw out their contents: those that carry red blood part with that fluid; those that have only the serum and coagulable lymph globules circulating through them can only deposit these in the surrounding parts. When the body is in health, and the injured parts are capable

of carrying on their healthy actions, the orifices in the vessels made by the injury are soon closed, the extravasation is stopped, and the fluid thrown out coagulates, and is absorbed: but in constitutions incapable of producing these effects, intended for the restoration of the parts, the tumour formed by the extravasation increases, and a section of it, when removed by the knife or by caustic, exhibits the appearance I have described; the structure of which, whether it is affected by the secretion of the glands being retained and mixed with the ingredients of the serous vessels, it is not possible to determine; but as it is not only in glandular but other structures that cancer is met with, this is probably not the case. The compacted lymph globules, among which there is no apparent circulation of any kind, is probably the morbid part, and that which carries on the disease both by its contact and absorption; since, as the malady continues, it increases in bulk; and when

any part of it remains, after an ineffectual attempt at its removal, a rapidity in the progress of its increase takes place.

The aqueous fluid, separated from this morbid consolidated mass of lymph globules, is generally considered as partaking of the morbid poison. Of this, however, upon considering all the circumstances, I am very much disposed to doubt. The following cases of hydatids in the gland of the breast tend to confirm me in this opinion.

A lady, twenty years of age, in getting upon her horse, accidentally struck her breast against the projecting part of the saddle. The accident brought on great pain, which lasted twenty-four hours. In fourteen days the parts recovered : but frequently she had so much uneasiness as to be led to put her hand upon the part. Three years afterwards a small tumour, the size of a pea, was felt, and the un-

easiness had become more constant. She made use of several means to relieve the pain. The tumour increasing at the end of the fourth year, I was consulted. At that time a hard moveable tumour was felt, of the size of a glass bead, about an inch below the nipple. I advised its removal. In the operation the lump was with difficulty kept steady: when removed, it was found to have a polished external surface, loosely connected with the surrounding parts, its size that of a small grape, its colour purple. On opening it, the coat was a thin membrane: it is probable that the blood effused from the accident left the serum which formed the contents of the tumour.

A lady, fifty-two years of age, putting her hand upon her left breast, felt a tumour about two inches above the nipple: it was the size of a nut; it gave no pain, and underwent no medical treatment. In three

months, appearing to increase, leeches were applied once in three weeks. This did not reduce its size, but took away a degree of uneasiness now felt in it. At the time I was consulted, the tumour appeared fixed in the gland of the breast. I applied hemlock externally; this not producing any benefit in a month, Mr. Cline was consulted, and an operation was proposed, as the only means that could with advantage be resorted to. On examining the tumour after its removal, it proved a cyst, containing a transparent fluid, the bag not thicker than cambric; the surrounding parts were condensed, but not altered in structure.

There are preparations in the Hunterian Collection of hydatids in breasts, supposed scirrhus, one of these the size of a pullet's egg, with a fungous excrescence projecting into the cavity. These at the time were called cancerous hydatids; but now I consider their nature as unconnected with that

disease. As the tumour produced in consequence of accidental violence, which degenerates into scirrhus, is most commonly met with in the mammæ of females, I shall illustrate the progress of this disease by cases in which it occurred in those organs, before I follow up the effects in other parts of the body.

That climate and constitution have a considerable part in such tumours being formed, I need only mention, that in the island of Otaheite, and those in its neighbourhood, fighting among themselves is the common mode of deciding the quarrels of the women. the blows are principally aimed at the breast, which has no defence; and cancer has never been met with in these countries.

On the Progress of Scirrhus in the Breasts of Females.

In the year 1773, when I began my education in surgery, under Mr. Hunter, the

cure of scirrhus had baffled the attempts of all those surgeons who had undertaken the treatment of it ; and, as if by general consent, all endeavours to cure such complaints by the practitioners of London, of any professional celebrity, were laid aside. This threw the treatment of cancerous diseases into the hands of empirics ; and the practice taken up by them was the destruction of the tumour by different kinds of caustics ; those of arsenical materials were preferred, both from the greater degree of the destructive powers of that mineral, and from its acting more readily on parts that are diseased than upon those in a state of health and vigour ; and it was concluded that, in general, its effects were limited to the parts diseased. But experience proving the want of success of this practice in cases of confirmed cancer, and the cruel torments produced by such applications lasting for a great length of continuance, it fell into disuse ; and when

it was also found that in many instances, in which the whole disease was not destroyed, the progress of the symptoms became more rapid than in cases where no mode of treatment had been adopted, all the encouragement that had been given to such applications was lost.

The operation by the knife was allowed to be less severe, of shorter duration, and more frequently successful: it therefore was generally preferred by regular practitioners. At this time it was believed that the power of contaminating sound parts was confined to the absolutely diseased structure; and, therefore, when the whole tumour was destroyed, a certain cure must take place: but when it was found that contamination is antecedent to apparent alteration of structure, the disease became more formidable, and the chances of a cure, either from caustic applications or extirpation by the knife, less to be depended upon. The following case, as it

proved this to be the case, ought to be generally known.

A lady had been for some time labouring under a cancer in the breast, which had extended throughout the whole mamma, which was hard and tumid; there was also a fungous excrescence, about the size of an egg, in the space between the breast and axilla, and the glands in the axilla were enlarged. Both the mamma and the excrescence were in a state of ulceration, discharging a large quantity of an aqueous fluid, mixed with blood: the surface frequently bled. At one time the bleeding was stopped by lint imbued in oil of turpentine, which gave great pain during the whole day in the substance of the breast, the glands of the axilla, and down the inside of the arm; but the pain went off, and an oozing of blood alone remained, which Mr. Hunter put a stop to by Mr. Ruspini's, the dentist's, styptic. Her state of health was

much impaired, and she was far gone with child. Under these circumstances she was brought to bed. She became so low and faint, that her friends hoped that death would terminate her sufferings. While in this state of debility and depression, the breast and excrescence mortified : the mortification extended to the sternum ; but the depth to which it had gone was unknown. Her health slowly mended : a separation began at the edge of the slough, and in a few days the whole of the mortified part, including the breast and tumour, came away, leaving the pectoral muscle exposed. By the use of bark, wine, and porter she rallied, and hopes were entertained of her recovery, as now it was supposed she only laboured under weakness, the cancer being completely eradicated. The edges of the sore became thick and ragged, extremely tender, and were turned outwards ; evidently showing that they were not in a healthy state, and that there was

every reason to believe that they were carrying on the disease. In her present debilitated state, it was impossible to give attention to any other consideration than her general health ; but the signs of her recovery were not of long duration : she became weaker, her appetite failed her, the sore made no progress towards healing, there was little or no discharge, and there was no appearance of granulations. Different parts of the body mortified ; and wherever there was a scratch or pimple it ran into mortification : and in this state she died.

At the time the tumour mortified the constitution was so much weakened, that it was probably too far reduced to admit of her recovery ; but, during the interval in which the dead parts were separated from the living, there were sufficient powers of life existing to have made the surface of the sore, had it been free from contamination, acquire a healthy look, for it re-

mained for a short time without undergoing any change; it then took on the appearance peculiar to cancer: no new granulations were produced, even of an unhealthy kind.

As Mr. Hunter was, at the time I mention, in high estimation as an operator, more especially for the dissecting out of tumours, a great proportion of cancerous cases came under his care, and the attendance during the healing of the parts was entrusted to me; which gave me, in the outset of my professional life, extensive opportunity of witnessing the symptoms and progress of this disease.

These opportunities having been continued to me by living with Mr. Hunter till his death, and since in my own practice, in all fifty-seven years, I shall take advantage of this experience in describing the more usual progress of cancer in different individuals; both where it was allowed to run its course, without any

effectual attempt to put a stop to it by medicine, and where it was made the subject of a surgical operation.

As the number of cases is very considerable from which those now published are selected, I have chosen only such as deserved to be recorded, from having some circumstance peculiar to them not met with in the others.

Cases of Cancer of the Breast that came under my own immediate Observation.

A lady, when forty-eight of years of age, had a lump in the left breast, considerably advanced towards ulceration. The glands in the axilla and above the clavicle were swelled and indurated; the arm was swelled, with pain in the shoulder and back.

When twenty-eight years old she had a small tumour, the size of the end of the finger, which remained stationary for six years, at thirty-five years of age grew larger,

and occasionally gave pain. It afterwards rapidly increased, and arrived at its present state of a confirmed cancer, which was considered beyond the reach of an operation ; and it terminated in the death of the patient.

A lady, between fifty and sixty years of age, had a cancerous tumour in the breast, moveable upon the pectoral muscle. This was thought by the surgeon in the country a case for operation ; but Mr. Cline, on examining it, was of a contrary opinion. In about two months from this period the arm had become much swollen, and at this time my opinion was requested, which accorded with that of Mr. Cline ; but we were unable to convince the surgeon in the country that he was not in the right. He said that the swelling in the arm made no part of the disease, and was only a sympathetic affection, which could be readily reduced. I told him, that as soon as he succeeded in

reducing the swelling of the arm, neither Mr. Cline nor myself would object to the operation upon the breast.

By means of bandages he was enabled to diminish the size of the arm, but not to prevent the return of the swelling to the same degree as before, when the bandages were omitted. The disease continued to increase, and in a few months the patient died.

A lady, fifty-eight years of age, had a tumour in the breast, which for nine or ten years had been growing to its present size. Several glands in the axilla were enlarged; the tumour itself made slow progress, but the skin, which firmly adhered to the tumour, and had an appearance of being tucked down upon it, had in the neighbourhood become studded over with small tumours, resembling split peas: they first appeared there, but in nine months they were met with all over the body, on

the opposite side as well as that on which the tumour had formed. They were in no place close together, being about an inch apart, and nearly the same in size, but rather larger near the original disease. They gave a considerable degree of uneasiness, and her health was much impaired. In a few months she died. The tumour had previously become painful; frequent retchings had been produced, and her stomach retained little or no food.

It is a question whether the smaller tumours in the skin were cancerous, although consequences of that disease, since they are met with in cases in which no previous cancer had existed.

A lady of a delicate habit, who, before she was thirty-seven, had several children, and had had milk abscesses in both breasts, found a small tumour in her left breast; besides this, the glands in the axilla were enlarged. This tumour I did not believe

cancerous, as the glands in the opposite axilla were also enlarged. The tumour increased in size in the course of a year; and in another year was still larger. In the third year the glands in the axilla were more swelled and painful, and a small tumour formed in the skin, near the original one. In the fourth year all the symptoms increased, and a second tumour formed in the skin. An inflammation in the lungs, to which she was subject, now came on, from this time she never noticed her breast, in which the symptoms remained stationary; and after an illness of four months she died.

An operation would have hurried on the disease, and caused her death at a much earlier period.

A lady, fifty-seven years of age, had a small tumour in the breast, without pain, the size of a pea. In two years it had scarcely enlarged. At that time she re-

ceived a blow upon it, and it afterwards rapidly increased, with occasional pain. Six months after this I saw it. The tumour, which was situated above the nipple, was too large and too firmly connected with the surrounding parts to encourage an operation proving successful. I saw it occasionally : its increase was uniform ; no glands in the axilla became enlarged, but one swelled above the clavicle. In six months she had a violent inflammation in her lungs. On her recovery the tumour had become very large. After another year a tumour formed between the breast and clavicle, and two small ones above it. At this time an empiric gave her promise of a cure ; but she was to give him a guinea a day till it was effected. I begged to have an interview, and told him that if he failed I should ruin his character by my exposure of it ; and as the glands above the clavicle were affected, he could not succeed : in this way the attempt was abandoned.

In two years more the original tumour became a sore: this was five years after it had been struck. The ulcerated surface was about the size of half a crown: it discharged a considerable quantity of limpid fluid: the ulceration increased rapidly, the edges rising higher than the surface of the sore. In two months a bleeding took place, which was readily suppressed: this returned periodically every three weeks, to the quantity of eight ounces.

At the end of the sixth year the ulcer became very large; and from the thickness of its margin, covered with an imperfectly formed cuticle, it acquired a great depth. Her general health became impaired; and the pain was so severe that she took two hundred drops of laudanum twice in the day, to afford her intervals of ease.

At the end of the ninth year she died, worn out by the repeated bleedings and the progress of the disease. The only treatment made use of was powdered extract

of hemlock, which for years considerably diminished the pain ; so much so, that when some which had been prepared with great attention was expended, and that made in the ordinary way was substituted, she complained that it had lost its beneficial effect. Had she employed the empiric, her life would have been shortened, and her income, which was small, eaten up.

A lady, who had occasionally matter, blood, or bloody water issue from the nipple, had, some months after, a tumour formed, and the nipple ulcerated ; the glands in the axilla swelled, and all the symptoms of cancer came on, of which she died.

A woman was received into St. George's hospital with a small tumour at the basis of the nipple, which was very moveable. The first symptom of the disease was blood oozing from the ducts in the nipple. It

was removed with the surrounding parts. The tumour, when examined after removal, was found to be entirely circumscribed, and appeared to be no part of the gland of the breast, but a newly formed structure ; and I never heard of the disease having returned.

A lady, twenty-three years of age, had a tumour in the breast, hard to the feel, giving occasional pain : it had continued for a year, when Mr. Hunter extirpated it with the parts surrounding it. Upon examination of its structure, it was found to be a solid tumour, distinct from the neighbouring parts, to which it was only slightly attached.

It is impossible to tell whether it would have ultimately become cancerous ; but there is every reason to believe that, as she advanced in life, it would have acquired a cancerous disposition.

A lady, thirty-five years old, had two small tumours in the left breast, at six inches distance, on the upper part, without pain or uneasiness. I stated that, in my opinion, they were not malignant. In two years they had not enlarged, but were at times painful. The patient wished them removed, and the operation was performed. When examined, they were found to be circumscribed; and when the covering was divided the substance expanded itself.

A woman, fifty years of age, who had a tumour in the breast, which had not arrived at a large size, and was unaccompanied with enlargement of the glands in the axilla; it was therefore extirpated by Mr. Hunter, in 1774. The wound was slow in healing, and a knot the size of a pin's head appeared on the cut edge of the skin; in two days a second knot appeared, at the distance of three fourths of an inch: these increased rapidly in size, and were

destroyed by caustic. The wound healed, and she never afterwards had return of the disease, but died of a dropsy, seven years after the operation.

This case proves that, in the first instance, the appearance of small excrescences on the cicatrice of the wound, made in the removal of cancerous tumours, is not always of a morbid nature, and capable of carrying on the disease.

A lady, thirty-two years of age, the mother of several children, discovered by accident a tumour in the breast. As the tumour was movable, means were taken to disperse it; but these proving ineffectual, I was consulted, and advised its removal, which was acceded to. At the time of the operation the tumour moved freely in one direction, but was more confined in that of the fibres to which it was found to be attached, and part of that muscle removed along with it. The wound healed in three

weeks. In six months after the operation, a fulness was felt in the pectoral muscle, attended with pain; in a twelvemonth a tumour had formed, and the skin was put on the stretch. The pain had become intolerable; the tumour daily increased; and, upon her being seized with vomiting, the lower part became discoloured from the rupture of the smaller vessels. A fortnight afterwards the skin broke, and a fungous excrescence appeared, covered with blood, from the vessels in the surface giving way. In about three weeks she died.

From this case we learn the difference which the disease of cancer puts on in a glandular structure and in a muscular one: it also explains to me the nature of the true hæmatoïdes, which is the effect of cancer when a muscle is the seat of the complaint.

A lady between fifty and sixty had a tumour in the breast, which was removed by Mr. Hunter. The parts healed kindly; but at the end of a year and a half a gland in the axilla enlarged, and the pain was dreadfully severe, and she courted an operation. In performing it, upon dividing a nerve that passed over the surface of the tumour, she said, "The pain is gone;" and it never after returned: but the progress of the disease was not stopped, and in two or three years she died.

In illustration of symptoms frequently arising from a nerve put on the stretch being mistaken for those of the disease, I shall mention the following case:—

A gentleman, forty-four years of age, had an abscess formed on the spine of the os ilium, of a scrofulous nature. When it broke, the bone was found exposed, and several exfoliations took place. A sinus formed in the course of the sartorius

muscle, which produced no uneasiness; there was also a small abscess in the course of the sinus. The knee-joint became affected, producing the most violent pain, which nothing could subdue. In opening the abscess in the thigh, the point of the lancet divided the nerve that accompanies the sartorius muscle, which had been put on the stretch by the pressure of the abscess. The pain ceased immediately, and never after returned.

A lady had a tumour in the breast, near the nipple; it was small, flat, hard, and moveable on the pectoral muscle. The pain was slight; in two years it had not increased beyond an inch in breadth. She wished to have it removed, which was done by the knife. The tumour, when examined, was not of a scirrhus nature; the patient very soon recovered. In three months both edges of the cicatrix were studded with small tumours, and the symptoms of cancer

made a rapid progress, which had been accelerated by the operation.

A lady had a tumour in the breast, moveable on the pectoral muscle, and no glands swelled in the axilla. I removed it very freely. When the wound was nearly cicatrised, three small tumours appeared on the cicatrix, which she refused having extirpated: in five days there were twenty, and she died within the month, the disease having been accelerated by the operation.

A lady, when fifteen years old, received a blow on the right breast, from the elbow of one of her brothers. When recovered from the effect of the accident, a little hard swelling remained: this when she was twenty increased, and at twenty-seven had become so large that she had it removed by an operation. In about three years and a half there was a swelling upon the upper side of the cicatrix; and when thirty-one

the swelling was the size of a hen's egg, and so near the surface that the contents were seen to be of a purple colour; but it was not removed, and the termination of the case was never made known to me.

A woman, thirty years of age, the mother of six children, had a tumour formed in the breast, which, when the size of a walnut, was extirpated. About two years afterwards there was a gland in the axilla enlarged and painful; this I removed. In two years more another gland swelled; this at her desire I removed. At the end of three years other glands enlarged. At her earnest solicitation I removed these, which were more numerous and deeper seated than could be ascertained before the operations. All those that had become enlarged were extirpated. The arm continued swelled for a fortnight after the operation; but this, when the inflammation subsided, went off; but the progress of the disease

had not been arrested ; and, in two years, more glands swelled, and she died.

This disease was so slow in its progress that it required seven years to prove fatal : and now that we know from experience that where there is a return after an operation, the progress of the disease is accelerated, there can be little doubt but that the patient would have lived many years longer had the original tumour been left to itself ; since, in many cases of tumour in the breast, where no operation was attempted, the tumour, after a certain time, has remained stationary.

A woman, forty years of age, had a tumour in the breast, which extended to the axillary glands ; but, as far as could be ascertained by examination, all the affected glands were within the reach of removal. Mr. Hunter did not hesitate to perform the operation ; and, although more glands were found diseased than were expected, all of

them were removed, so as to include the whole cluster in the axilla ; in doing which the axillary artery was laid bare throughout an inch of extent.

A few days after the operation the arm began to swell. This increased daily, till it became so distended as to give considerable pain ; and in about three months she died. When the body was examined after death, the disease had extended to the ribs and the muscles of the chest.

The result of this case taught Mr. Hunter, as well as me, that when several glands are enlarged in the axilla, the chances in favour of an operation are so small, that the desire of the patient was the only motive that could induce us to its performance.

A lady, seventy-two years of age, consulted me for a cancer in the breast. There was an open sore, the size of a silver penny, between the nipple and sternum, and a

gland the size of a nut close to the edge of the sternum, imbedded in the hollow between the fourth and fifth ribs, admitting of little motion, attended with pain.

About four years before, a small tumour had formed in the seat of the present sore, which increased to the size of an egg. The surgeon she consulted pronounced it of a cancerous nature, and removed it. She continued well for ten months; but then the present lump arose, which in the last six months acquired its present size: the cicatrix of the wound also ulcerated, which has remained stationary of the present size.

Glands affected in this direction are seldom met with.

A lady had a tumour removed from her breast, on its being believed cancerous; but as she had an uncommon affection of her breathing during the enlargement of the tumour, a connection between the two

diseases was suspected. The operation appeared to increase the complaint in the chest; and, although the wound healed, she died a month after.

When the lungs were examined in the dead body, they were every where condensed into a solid mass, and adhered universally to the ribs: when cut into, tumours of different sizes were met with, entirely distinct from the parts surrounding them, some not larger than peas. Where they were small, the natural structure of the lungs could be distinguished; but where large, suppuration had taken place, and the lungs were broken down into the same mass. Matter was found in the trachea. Some of the tumours were as large as an egg; those in the mediastinum larger. They contained a substance, in consistence between jelly and soft cartilage. These must have formed in the lymphatic glands, which put on a similar appearance under the influence of cancer.

A healthy lady, thirty-six years old, who had one child, had a lump in her breast, on the side next the sternum, the size of an egg; no thickness could be felt towards the sternum nor arm-pit: it was removed by Mr. Hunter. While the wound was healing, she was attacked with a pain up that side of the neck which extended behind the ear, supposed rheumatism. The pain came lower and lower; first to the shoulder, then to the arm in two places, at the insertion of the pectoral and latissimus dorsi muscles. The arm began to swell as low as the elbow; the parts became stiff and brawny. Two small pimples formed on that part of the skin not removed, about two inches from the wound, with hard bases, but did not become an open sore. At the same time, under the old skin, close to the cicatrix, another pimple formed. These pimples were removed by the kali purum; the sloughs came away; and the sores left appeared to be healing. Mr. Pott,

in consultation, stated the whole to be cancer, and nothing could be done; that he had seen several such cases.

Erysipelas took place round the sore, with fever; the inflammation spread towards the shoulder and arm-pit, down the side and arm, and fore-arm. The inflammation along the lower edge of the pectoral muscle went into the cellular membrane; suppuration took place, an abscess formed and broke. The erysipelas disappeared, the sores from the caustic healed as well as the abscess, and the hardness in the surrounding parts in a great measure subsided.

Tepid baths were used for the swelling of the arm, but it did not subside; small tumours appeared in the skin over the pectoral muscle: these local symptoms increased, and in a short time she died.

I shall conclude the histories of this disease in the breast with the following, that shows how little we can ascertain the true

nature of a disease in the breast by any previous examination. It will be seen by the cases already stated, how often we are mistaken in believing that the case had not gone so far in its progress as to preclude the successful result of an operation for its removal. In that which follows, we find that the progress of inflammation into the neighbouring parts was not attended with contamination, and the tumour had never been of a cancerous nature.

A woman, between forty and fifty years of age, had a tumour in the breast, which had increased to a considerable size. It suddenly swelled, and an operation was postponed, in the hope that this was accidental, and would subside; but this not taking place, no time was lost in arresting the progress of the disease, by removing the tumour. In the progress of the operation it was found to adhere to the pectoral muscle; this made all hopes of her

getting well to be abandoned; and the operation was finished as quickly as possible. When put to bed, she had faintings and vomitings for two days. The tumour, when examined, had all the characters of a true scirrhus. The wound healed kindly, to my utter astonishment; and she never after had a return of the disease.

After the *mammæ*, I consider the tongue as most liable to cancerous affection; and therefore shall take up the consideration of this disease in that organ.

Any local affection of the tongue is liable to take on a disposition to become cancerous, or, in other words, to propagate itself by affecting the glandular structure of that organ, and afterwards have the disease carried on by absorption. As all such cases have a fatal termination, if the parts are not in an early stage extirpated, there is good ground for treating them all as cancerous; and the

cases of this kind that have come under my own observation are the strongest proofs of the origin of the tumour not being of a poisonous nature; since in all these, where the operation was resorted to before the disease was largely extended, the cure has been permanent, and in the others has proved fatal. I shall now give some of the cases of this disease.

John Weymouth, eight years of age, was admitted under my care in St. George's Hospital, the 24th of December, 1800, on account of a fungous excrescence on the right side of the anterior part of the tongue, extending into the substance of the organ nearly to the middle line at the tip; the origin of the fungus existed at his birth, and had been removed by a ligature round its base; but when the ligature came away, the bleeding was considerable, and the excrescence gradually returned. Several attempts were made by caustics and the knife,

but still it returned. This led me to remove the portion of the tongue on which the excrescence grew, in the following manner:— On the 28th of December, the boy holding out the tongue, a crooked needle with a double ligature was passed through the substance of the tongue, some way beyond the tumour, and brought out on the lower surface. One ligature was tied behind the tumour, the other before it, including a segment of the tongue, which happened to be unusually thin in its substance. The operation gave little pain; he took thirty drops of laudanum, was put to bed, fell asleep, and next day was without pain. On the fifth day the slough came away. A second slough formed, which came away on the fifteenth day. The parts healed kindly, leaving a slight fissure; and he continued perfectly well.

Margaret Dalton, forty years of age, was admitted on the 25th of December, 1801,

into St. George's Hospital, on account of a tumour, the size of a pea, on the right side of the tongue, near its edge. It had begun by a pimple, and increased without pain. It impeded her voice, and, when bruised by the teeth, bled freely. It was removed exactly in the same manner as in the last case: a considerable salivation ensued, which was much more troublesome than any other symptom, and continued till the slough came away. The ligature furthest from the tip separated on the sixth day, and the other on the seventh. In three days the wound healed, and she got well.

A gentleman, forty-one years of age, consulted me for a tumour in the tongue, the size of a pea, which in my opinion would become cancerous. Mr. Cline coinciding in this opinion, I removed it, the 28th of December, 1802. The tongue was thick; the space included by the ligature more than an inch on the circumference of

the tongue. The operation produced pain of the numbing kind ; the part included by the ligatures became immediately dark coloured : a salivation ensued. The next day the pain and salivation increased, and the patient was unable to swallow ; but on that following, got down broth and negus. On the sixth day the slough was loose, and the least motion of the tongue gave pain. The ligature on the right side had not deadened the parts in the centre, which accounted for the pain. On the seventh day the left ligature was brought away : another ligature was applied behind the right, which gave great pain ; on the eighth the pain and salivation diminished ; on the ninth the whole mass came away ; on the thirteenth the tongue had so much recovered, that there was only a fissure half an inch in depth, not producing the slightest deformity.

A gentleman, fifty-nine years of age, had a tumour on the side of the tongue, of the size of a hazel nut : he had no knowledge of its origin. He perceived it six months before, and its increase had been rapid ever since. I advised its removal, which took place on the 13th of November, 1804. I passed a needle with a double ligature behind the central part of the tumour, and made a single knot upon each, including the tumour between them ; and finding the covering of the tongue very tense over the tumour, I made an incision through it with a lancet, the whole length of the tumour, down to its substance ; and laid bare its surface to some extent. By this means the side of the tumour next the edge of the tongue became disengaged, and, by tightening the ligatures, was forced from its bed. This removed the tension, and made the ligatures tighter. He expressed little pain, and went to bed. Upon examining the tumour, the section had an oval figure ; its

colour yellowish white: one portion had a compact texture, and evidently had been first formed; the other was more pulpy, but not distinctly striated. Nov. 14th, he continued uneasy, but not in much pain, for twelve hours. During this period the saliva was increased, but the parts then became quiet; he took fluid nourishment, spoke plain, and walked about. The ligatures had completely deadened the parts. — 16th, had slight pain when the ligatures were touched: the swelling and inflammation of the tongue had diminished. — 18th, speaking and eating gave more pain; the slough was very offensive, and, after eating his dinner, came away. The surface of the sore next day was very tender. — 20th, the pain abated; the tongue became less tumid; the edges of the sore were more contracted, and in a few days were completely healed, and the loss of substance hardly perceptible.

A gentleman, sixty years of age, consulted Sir William Blizard for a tumour in the tongue, the size of a swan shot, hard, and firmly connected to the surrounding parts. I was requested to assist in the operation. A needle with a double ligature was passed through the tongue, behind the tumour: when tied it gave a good deal of pain; but the sensibility was immediately destroyed. After the operation, the patient sat down to dinner with great cheerfulness: on the sixth day the ligatures came away. On meeting the patient a few days afterwards, I could only perceive a slight indentation where the tumour had been.

A gentleman, thirty-six years of age, had a small sore upon the edge of the tongue, the effect of irritation of the tooth with which it came in contact. The tooth was extracted; a second tooth was drawn, but the sore put on a malign aspect, and gradually increased. In a few months it had

ulcerated so much as to make talking painful, and his words indistinct. He lingered in this melancholy state for six months, and died.

The disease had run its course in ten months, and the greater part of the tongue was destroyed.

An officer, between fifty and sixty years old, had a small foul ulcer on the side of the tongue, which resisted all means of cure. A gland behind the lower jaw swelled, which induced Mr. Hunter to pronounce it cancer. The disease gradually increased, and in two years he died.

Examined after death, there was, immediately under the coronal process of the lower jaw, on the right side of the neck, an enlarged gland, which was very hard, and had existed during many years; had been in general troublesome, tender, and painful to the touch: it measured an inch and a

half in thickness, and weighed about two ounces and a half.

The thyroid gland was diseased, as well as the lymphatic glands of the neck in general. The tongue and pharynx appeared at his death the seat of the disease, and were completely destroyed, except a small remnant of the tonsil gland, which was in the state of scirrhus. Every muscle belonging to the tongue was destroyed, and formed into a scirrhus mass. The back part of the tongue had been destroyed by ulceration, which formed a contraction that left it in a triangular form, with a warty surface.

Cancer in the testicle has two modes of making progress ; the one by becoming a scirrhus, exceedingly hard, and contaminating the cord, and then the lymphatic glands, in its progress, as high as the loins. This is called a genuine cancer, and has been described accurately by several writers on surgery. There is, however, another

disease, which, as it contaminates the neighbouring parts, and continues its course by means of the absorbent glands, it may be considered not improperly as the same disease.

In either of these local diseases, the parts are not capable of contamination of the neighbouring parts till after those have long continued to have lost their healthy state; and when the organ is extirpated early, the patients, I believe, always get well. But this is a rare occurrence when the disease has completely established itself; and when it has, an operation, or any other violence committed upon the parts, by its irritation, accelerates the progress of the disease.

A gentleman had an occasional swelling in one of his testicles, which subsided, but returned again, and in the end became permanent, extending someway along the cord. When it was in this state, it was ex-

tirpated; the skin that adhered to the testicle was freely removed, and the cord was included in the ligature, as high as the abdominal ring : — all went on well. About nine months after the operation, a swelling under the upper part of the cicatrix was observed, which appeared, both to Mr. Pott and Mr. Hunter, to be a lymphatic gland. This increased in size, and with others that appeared formed one mass : a degree of fluctuation was felt, ulceration took place, and a fungus shot out, which often bled, and he died.

In this case the return was not in the line of absorption nor cord; and the cicatrix never gave way. To account for this return, the glands in the groin must have been affected by the diseased skin of the scrotum.

This is an uncommon circumstance, and surgeons have not hitherto taken the risk of the disease being carried on from the

scrotum into the account, when an operation is the question under consideration.

A gentleman, between fifty and sixty years of age, received a hurt on the testicle, which immediately inflamed and swelled; it, however, was reduced. In a twelve-month the testicle again swelled: he went through a slight course of mercury. Several other means were ineffectually tried. In eighteen months from the accident, suppuration took place; the sore that was formed Mr. Hunter pronounced cancerous. The edges of the sore were turned outwards, leaving the testicle in the centre. The spermatic cord was thickened; this extended into the belly; and in six months he died.

On examining these parts after death, the testicles were wholly destroyed, as well as the spermatic cord of the left side; and on the right there was a small tumour projecting from the os pubis, which appeared to

be the termination of the cord on that side.

The glands on the pubis and towards the groins formed two large tumours. The chain of glands running along between the psoas muscles and spine, on both sides of the body, were diseased: those near the pubis contained matter; those higher up did not. On the right side the disease extended as high as the receptaculum chyli; on the left side there was a tumour, just below the pancreas, to which the omentum and duodenum adhered.

The glands that had not suppurated contained a substance like cream cheese, some like cream.

A chairman had a swelled testicle, not painful nor affecting the cord, although it was of considerable size; the skin adhered to the testicle. It was extirpated, and much skin removed. The wound healed; but in two months it broke out again,

throwing out a fungus, which increased to the bulk of an orange : this bled ; the man's health became impaired ; he lost his senses ; troches of arsenic were used, but had no power over it, and he died.

It was found after his death that the fungus arose from the edges of the old skin at the cicatrix, and not from the sore or cord, both of which had ulcerated ; but no fungus originated from them.

A gentleman, in December, 1781, felt an uneasy sensation in the scrotum, and perceived that the left testicle was swoln, and hard to the touch ; the disease was considered as hydrocele. In the beginning of March, 1782, it had increased both in size and hardness, the pain acute. Upon a consultation, it was believed that the disease was not simply hydrocele. He was led to take another surgeon's opinion : this surgeon attempted to let out the hydrocele ; but no water followed the punctures, which

brought on inflammation. Mr. Hunter now saw him : he laid open the scrotum, and removed the tumour. On examining it after removal, it was found to be a thickening of the tunica vaginalis, filled with a colourless coagulum, the testicle being in a natural state, diminished in size from pressure.

The parts healed readily. Some months after, a swelling took place in the lower and left side of the abdomen, which increased ; he became hectic, and died.

On examining the body, masses of white coagulum were met with, extending up the left side as high as the diaphragm, not firmer than coagulated milk with whey. One in the omentum connected the liver, colon, stomach, and other viscera together. The liver was full of small tumours, the size of a bean, of the same structure. The spermatic cord out of the body was thickened in the same way.

Cancer in other parts of the body be-

sides glands is frequently met with. In some cases it is the immediate consequence of accident ; in others, it is the effect of the parts having long continued in a diseased state, to which they had appeared to be so accustomed as not to undergo further changes until the patients advanced in age, and then, from very slight causes, have received a new degree of excitement ; and an excrescence of a cancerous nature has been formed. We have from this a confirmation of no cancerous disease ever being so in its origin ; and learn, that, when parts have been long in a diseased state, we have no security against their not ultimately taking on a cancerous action : but in all such cases, there must be a peculiarity of constitution existing, previously to the parts undergoing such a change.

John Wallace, a married man, thirty-seven years of age, a sailor, became my patient in St. George's Hospital, Nov. 18th,

1803. Four years before that time, in a storm at sea, the main-topmast of the ship was shivered. The upper portion was hanging loose and swinging : he was ordered to go up and cut it away. While clinging to the standing mast, his glans penis was caught between the two portions. He immediately fainted, and fell into the round-top. The glans was made as flat as half a crown, and began to inflame and swell, as well as the body of the penis and testicles. At the end of three weeks the glans recovered its natural shape, having only a small pimple where the frænum is attached to it. This, six months after, began to ulcerate, and became painful. The ulceration extended round the corona glandis ; and the glans enlarged, became hard, irregular in its figure, with shooting pains through its substance and along the body of the penis ; his general health not affected. His complaint was aggravated by every mode of treatment pur-

sued, particularly by a severe salivation. On the 10th of September, 1803, he was received into the Lock Hospital; the surface of the glans ulcerated, discharging a thin watery fluid, sometimes tinged with blood. At the posterior part the prepuce adhered firmly, and assumed a dark purple colour. He complained of a hot, pungent sensation on the surface, and occasional darting pains through it, which continued for three or four months, depriving him of sleep. Some of the glands in the groin on the left side enlarged, and became indurated, though not painful; the body of the penis had its natural appearance; the glands were moveable under the skin, which was not affected. A single gland in the right groin had begun to enlarge; erection gave no pain; and nocturnal emissions were attended with the natural sensations.

Sept. 16th. Creta ppta. levigated was applied, so as to cover the sore, morning and evening: it produced no alteration in the

appearance, but gave a degree of ease he had not for months experienced.

19th. The sore looked cleaner ; the pungent pain left him.

23d. The sore and hardness, also the discolouration, were diminished.

Oct. 10th. He was free from pain ; the edges of the sore had begun to form new skin ; the glands remained the same.

27th. Had severe pain in the glands of the left groin, attended with throbbing and shooting into the thigh : in twelve hours they went off : the glands had increased in size ; the emissions more frequent since the going off of pain in the glans.

Nov. 1st. A slight fluctuation was felt in the most projecting part of the tumour in the left groin, which continued painful, though in a less degree.

15th. A small spot, the size of a silver penny, on the anterior part of the glans, which had continued hard ever since the accident, now became foul and sloughy.

18th. When he came under my care, the glans had the aspect of a cancerous tumour, with a small deep ulceration on the anterior part, with a hard tuberculated margin, over which was a thin cuticle. I directed a poultice, made of a saturated solution of arsenic in boiling water, diluted to a drachm in a quart of water; and three drops of the saturated solution to be taken three times a day.

25th. A slough separated, and he lost half a pint of blood; the hæmorrhage was stopped by ol. terebinth. and a common poultice applied.

28th. The internal use of arsenic left off, having brought on pain in the bowels.

Dec. 4th. The penis less swollen; the ulcer clearer; the tumour in the left groin inflamed. It was poulticed, and a grain of opium given every night.

8th. The discharge thin, copious, and excoriated the skin; the ulceration increased.

15th. The arsenic resumed internally.

26th. The tumour in the groin ulcerated; the pain still severe.

Jan. 5th. All medicines left off. His symptoms uniformly increased; had several bleedings; the left thigh became swollen.

Aug. 5th. A small oval livid tumour appeared on the skin, between the navel and right groin. He lingered on in this state till the 12th of October, when he died.

On opening the body, lymphatic glands in a diseased state were met with on the psoas muscles, in the mesentery, and on the vertebræ of the loins. Those nearest the original disease, when opened, contained a substance like cream; those higher up were more solid.

A gentleman, forty-nine years of age, who had resided twenty years in India, and returned to England in the year 1790, in 1801, after walking in tight shoes, was so pinched in his left foot that he could not,

for some time, put it to the ground, on account of the pain. After taking a long walk he found a lump, the size of a pea, perfectly movable over the space between the metatarsal bones of the third and fourth toe. In about three months it increased in size, and I was first consulted. It continued to enlarge under the application of camphor and mercury. In April, 1802, it was the size of a pullet's egg, and was growing rapidly. It was dissected out, and was found to have gone down between the bones. When examined, the surface was entire, and no doubt entertained of its being wholly removed. It was of an oval form, made up of concentric circles, of a consistence between ligament and cartilage, and white in colour. It was nine months before the wound healed. The cicatrix remained tumid; and he never recovered the use of the foot. In about two months there was an evident return connected to the bones: this second tu-

mour increased rapidly. It was now proposed to remove the metatarsal bone with the tumour; but the operation was postponed on various accounts, and in the course of eight months the skin ulcerated, and a fungous excrescence protruded. It was attempted to destroy this, by equal parts of arsenic and sulphur, which gave pain, but not severe.

Nov. 1st. The tumour had shrunk, and the slough began slowly to separate; the discharge, a thin watery fluid.

22d. The deadened mass, weighing fourteen ounces, separated; but the surface underneath had the same radiated structure.

Jan. 4th. The powder had been twice applied, but the tumour increased, and the skin under the sole was tucked in. The *kali purum* was tried, then the actual cautery; but no benefit ensued.

On the 25th of March the leg was amputated below the knee.

Upon an accurate examination of the section of the tumour, it had a striated structure : the progress of the disease was less distinct near the tarsus, but more so in the other parts, especially near the circumference.

A Tumour under the lower Jaw, which, from its Structure, appears to have been cancerous.

John Elliott, a pilot from Deal, fifty-three years of age, was admitted into St. George's Hospital on the 14th November, 1806, under my care, on account of a tumour situated on the right side of his lower jaw and neck.

As far as he could recollect, this tumour began at least sixteen years before ; and from his description it seems to have first appeared near the base of the inferior maxillary bone, and immediately before the insertion of the masseter muscle. It gave him no pain, was soft, and could readily be

moved in every direction. Its size, at first, was very small ; but it gradually increased, and the increase every year was more rapid in consequence, he supposes, of its additional weight. For some years past it has occasioned considerable pain and irritation, after any long exposure to cold ; and to this, from the nature of his employment, he has frequently been liable. Different parts of it have also suppurated at times, and burst, discharging a thick matter ; after which the apertures again healed up.

At the period of his being received into the hospital under my care, the size to which it had increased was very considerable : its base begun opposite to the zygomatic process, and covered the greater part of his right cheek, and his neck, as low as the cricoid cartilage. From this attachment, or root, the tumour hung down over the clavicle, completely concealing one side of his neck, its posterior extremity descending on a line with the transverse processes

of the cervical vertebræ, and its anterior terminating in a rounded lobe, projecting some way before the chin: the following were its dimensions: —

| | | | |
|---|---|---|-------------|
| Round its basis it measured | - | - | 13½ inches. |
| Its length (measured parallel to the base of the lower jaw) | - | - | 21 do. |
| Its depth (measured parallel to the coro- noid process of do.) | - | - | 9 do. |
| Its anterior extremity projected before the chin | - | - | 5 do. |

It was situated between the integuments and the fibres of the platysma myoides muscle, was evidently encysted, and did not seem to have contracted any adhesions to the parts underneath, on which it was perfectly movable. It continued also free from pain, and soft to the touch. Several portions of it had become more prominent than the rest, giving it something of a tuberculated appearance. In these an indistinct fluctuation could be perceived; and in two parts it had burst, from which a serous fluid, with occasionally some meliceritious

substance, was discharged. The skin covering it was much distended, and, towards the middle of the tumour, discoloured, and apparently adhering to the cyst. The angle of the mouth, and the integuments covering the ala nasi and cheek on that side were pulled down by its weight, giving a distorted appearance to his face.

At different times during its progress a variety of applications had been tried, by several surgeons, with a view of dispersing it, but without the slightest benefit. He has of late only supported its weight by a handkerchief tied round his forehead.

On Monday, the 17th November, I removed the tumour: an oval incision was made through the integuments, nearly in the direction of the base of the lower jaw, but inclining more downwards, and dissected back a very large portion of them, to allow for the retraction to be expected in parts so much stretched. The hæmorrhage was very considerable, and from such

a number of points, that it became impossible to secure any vessels during the time of the operation, which was therefore finished with the greatest expedition. The principal vessels, by which the tumour was nourished, entered it from below the base of the lower jaw, and were numerous and of a large size. Eight or nine arteries were taken up with the tenaculum, and a needle and ligature were passed round a considerable cluster of vessels, coming off apparently from the trunk of the maxillaris externa. It was also necessary to secure the external jugular vein. The edges of the skin were then brought together, and retained by adhesive plaster, over which several compresses and a roller were applied, so as to keep up a steady and uniform pressure. The patient lost about two pints of blood, and, towards the end of the operation, became extremely faint. He was immediately put to bed, and directed to keep perfectly quiet.

The tumour was included in a firm, inelastic, membranous cyst. On making a longitudinal section of it, a large quantity of light-coloured substance, of the consistence of what is called melicera, and of serum, escaped.

In the internal view, a strong ligamentous band was seen passing through the tumour in a longitudinal direction, through its whole extent. This band had, towards the middle, evidently become cartilaginous, and was upwards of one tenth of an inch in breadth. From it strong membranous septa were sent off, nearly at right angles, towards the sides of the tumour, which were again intersected by others, running through it in different directions.

A soft steatomatous substance, of a pale bluish colour, filled up the interstices between these septa; and in several parts of the tumour hydatid-like cysts were found, containing a clear serum, and adhering to the sides of the septa.

The tumour, after a considerable part of its contents had escaped, weighed $4\frac{1}{2}$ pounds avoirdupois. The quantity that escaped must have amounted to upwards of a pound.

Two hours after the operation the wound began to bleed; and it was necessary to remove the dressings. Three or four small arteries, principally lying in the substance of the parotid and submaxillary glands, were secured; and, as several vessels appeared inclined to bleed, the wound was dressed with dry lint, and a napkin was applied very lightly to secure the dressings. The hæmorrhage seemed to have been produced by the irritation, from quantities of saliva collecting in his mouth and throat, which I attributed to the pressure made on the glands, in the manner in which the wound was at first dressed. The bleeding did not return. He passed a quiet night; and the symptomatic fever which ensued was very moderate. On the fifth

day the outer dressings were removed ; and by the seventh the discharge from the wound had become very considerable : all the lint and several of the ligatures had come away. On the ninth day the whole of the ligatures were got away, and the wound was dressed with adhesive plaster. The patient was now allowed to go out into the air. Nothing remarkable occurred during the progress of the cure ; the skin soon retracted, so as merely to leave sufficient to cover the wound ; but a considerable thickening and hardness in the neighbourhood of the glands, below the lower jaw, continued for some time, with a thin purulent discharge through two or three small sinuses. On the 19th Dec. I directed a solution of lunar caustic to be injected through these sinuses ; under which treatment they began to fill up, and the hardness gradually disappeared. On the 30th I desired the patient to sleep out of the hospital ; and from that time the improve-

ment was very rapid. On the 16th Jan. the wound was entirely healed, leaving only a cicatrix of a single line. The man returned into the country the next day.

A gentleman, thirty-five years of age, had a tumour formed behind the angle of the lower jaw, considered to be a lymphatic gland: this increasing, was removed. Three years after, another formed, and slowly increased to the size of a pullet's egg; it had no sensation: he received a blow upon it with a stick, in a drunken brawl, which did not injure the skin. In a few weeks it became double its former size, and was removed by Mr. Hunter. The tumour, when examined, was in its substance one half white, the other black. The colour was from blood, which pervaded the part formed after the blow, but did not extend to the original portion.

I never heard whether there was any

return of the disease subsequent to the operation.

Having stated the principal cases of this disease that have come under my observation, so as to explain its nature and symptoms, and their progress in particular instances; and having had the opportunities continued to me, for half a century, of paying attention to this subject, I am sorry to add, that very little progress has been made, either towards a cure or prevention of the disease taking place. Many tumours like those that formerly were, by violent applications, rendered true cancers, now never take on the disease: but no one is enabled, from such evidence, to prove that their more ordinary course would ever have led to such a termination. The progress of the symptoms having been decidedly retarded, and rendered less violent, is sufficient evidence that such mild means have

been employed with great advantage, in cases which were of a dubious nature.

The treatment in my own practice, that calls forth this commendation, is the internal and external use of hemlock; and, in proof of its efficacy, in some cases when the medicine was left off, the symptoms became more violent; and when resumed, abated. Also, when the powder of the leaves was prepared at the proper season, and the light entirely excluded while the drying of it was carried on, even in confirmed cancerous ulcers, benefit was derived in so great a degree, that the patient could ascertain from increase of pain some change had taken place in the application, when powder less accurately prepared was used as a substitute for the other. I have even prevented the operation when the day had been fixed; and the patient lived for months under this palliative mode of treatment, without any progress of the tumour, and was carried off by epileptic fits. In many cases

the swelling diminished, and in others remained stationary for years, and never afterwards made any advance : so that I am convinced that I had before been too much alarmed, and frequently came to an operation before it was required.

It is now fifteen years since I was taught by experience that the sarsaparilla, in the form of decoction, has not the same powers of a restorative medicine as in the form of a powder, to which heat had not been applied. Mr. Cline had ascertained the same fact : this I found when in consultation upon the case of a young gentleman, who had his uvula destroyed by ulceration. In this case several medical men gave an opinion in favour of nitric acid, and of the use of the decoction of sarsa. Mr. Cline and myself warmly expressed ourselves in favour of the sarsa in powder ; and our suggestions were adopted. In the course of four days the ulceration had been restrained by its use ; and in less

than a week the patient was allowed to be out of danger. From that time I never employed the sarsaparilla that had been exposed to heat, either by the fire, or the sun's rays in the window of an apothecary's shop.

In a case of ulceration of the palate and uvula, for which the patient had taken nineteen quarts of strong decoction of sarsaparilla, under the direction of one of the most respectable surgeons in Edinburgh, who made up, in his own house, the medicines he employed, — and therefore there could be no doubt of their being of the best kind, and prepared with every proper care, — the ulceration was still going on, and he came to London with the twentieth quart bottle in the carriage. Upon taking two drachms of the powdered root, freshly ground, three times a day, he recovered entirely in less than fourteen days.

Since I have taken up the use of the sarsaparilla in substance, I have been more successful in reducing glands that had become diseased, than by any other means. I have, in two cases of pulpy, enlarged testicles, after the disease had increased to a great degree, and resisted other modes of treatment, had the satisfaction of restoring the organ to a natural and healthy state.

So much am I satisfied of the great superiority of the powers of sarsaparilla, when not weakened by exposure to heat, in restoring a constitution that has become diseased, and of enabling parts that had taken on the symptoms too frequently preceding cancer to recover themselves, that, in my own practice, I shall never resort to any other means, in cases of this kind, till it has been tried.

EXPLANATION OF THE PLATES.

PLATE I. contains three figures; the first, a transverse section of an aneurismal coagulum of the natural size. It shows the different shades of colour of the layers, according to the length of time they had been deposited, and the crystallised salts as they appear in different parts of the coagulum.

Figs. 2. and 3. Different views of the crystals.

PLATE II. The section of a cancerous tumour. It contains seven figures.

Fig. 1. The surface of the section, natural size: one part is colourless; the other is vascular.

Figs. 2. and 3. Portions of the vascular part, magnified five diameters.

Fig. 4. The colourless part, magnified two hundred diameters; showing that it is composed of lymph globules.

Fig. 5. The vascular part, magnified two hundred diameters.

Fig. 6. Lymph globules, magnified four hundred diameters.

Fig. 7. Blood globules, deprived of their colouring matter, magnified four hundred diameters.



